



March 30, 2010

VIA Fax and Email

Mr Andrew Haire
Deputy Director-General (Telecoms & Post)
Infocomm Development Authority of Singapore
8 Temasek Boulevard
#14-00 Suntec Tower Three
Singapore 038988

Fax: (65) 6211 2116
IDA_Consultation@ida.gov.sg

RE: COMMENTS TO IDA CONSULTATION PAPER: PROPOSED
REGULATORY FRAMEWORK FOR 60 GHz FREQUENCY BAND

Dear Mr. Haire;

In connection with your February 19, 2010 Consultation Paper, WirelessHD, LLC (subsidiary of SiBEAM, Inc.) as the licensing and compliance agent for WirelessHD Consortium would like to respond to your request with views and comments to the questions posed in your Consultation Paper. Please note that the views and comments contained in this letter reflect solely the views and comments of WirelessHD, LLC. The WirelessHD specification and technology is a 60Ghz wireless protocol for the purpose of transmitting audio, video and data. Products that utilize the WirelessHD specification have been developed, marketed and sold throughout the world, including televisions and adapters that allow consumers to transmit full High Definition 1080p content from video source devices to television sets. We hope that our comments are helpful and we want to convey full support of IDA moving forward to permit unlicensed 60Ghz spectrum for these purposes in Singapore.

Specifically, WirelessHD, LLC makes the following comments on the specific items for which comments were requested:

Question 1: IDA invites views and comments on the compatibility report for ITS and Fixed Services to operate in the same frequency band, 63-64 GHz.

No comments.



Question 2: IDA invites views and comments on whether 63-66 GHz frequency band should be opened up for high power fixed wireless services.

No comments.

Question 3: IDA invites views and comments on IDA's proposed frequency bands to be allocated for operations of both low radiation and high radiation equipment. IDA also invites views and comments on a 100 MHz guard band at each end of the band to safeguard operations of other services in the adjacent channels.

Commenter respectfully agrees with the proposed frequency allocation for low radiation operation of 57-66GHz. This is similar to what other countries have approved and provides the necessary frequency allocation for applications to function, such as WirelessHD. This amount of allocation for low radiation equipment 57-66GHz is needed to provide the needed channels for operation of high bandwidth wireless applications. In addition, the 100 MHz guard band is appropriate. Also, note there is little risk that low radiation equipment, such as equipment used for WirelessHD applications, would interfere with high radiation equipment for a number of reasons, including the fact that WirelessHD applications are used in homes.

Question 4: IDA invites views and comments on the above two options for IDA to adopt for the channel plan.

WirelessHD, LLC respectfully comments that the channelization option (Option 2) would provide a benefit such that it would reduce the possibilities of collision with signals from low-radiation applications. ECMA and IEEE 802.15.3c in addition to WirelessHD use channelization techniques, which are similar. Thus, if IDA adopts a channelization plan for high power point-to-point fixed wireless services that is similar to ECMA, IEEE 802.15 and WirelessHD then this could reduce the risk of interference between such lower power systems and high power point-to-point fixed services (allowing lower power systems to switch channels for example if there is activity detected on a channel).

Question 5: IDA invites views and comments on IDA's preferred channel plan (Option 1).

Even though the risk is low that high-radiation applications will interfere with low-radiation application, it is recommended that high-radiation applications have a channelization plan.

WirelessHD, LLC respectfully comments that the channelization option (Option 2) would provide a benefit such that it would reduce the possibilities of collision with signals from low-radiation applications. ECMA and IEEE 802.15(3)c in addition to WirelessHD use a channelization technical, which are similar. Thus if IDA adopts a channelization plan

that is similar to ECMA, IEEE 802.15 and WirelessHD then this could reduce the risk of interference.

Question 6: IDA invites views and comments on IDA's proposed technical framework on RF output power and key requirements for the deployment of multi-gigabit wireless technology in the 60 GHz band.

For WLAN and WPAN (MGWS) we respectfully support IDA's suggestion of RF Output Power (EIRP) of "Not to exceed 40dBm (10W)" and "Maximum mean e.i.r.p density is limited to 13dBm/MHz." This maximum requirement is well supported by other regulatory frameworks throughout the rest of the world. Having consistent, clear and well supported regulatory framework supports efficient development of products, which is good for consumers and manufacturers.

IDA lists another RF Output Power (EIRP) requirement of "Not to exceed 25dBm (0.3W)" for WLAN and WPAN. It is not clear why IDA lists such a requirement and we respectfully recommend that this requirement not be adopted. Specifically, if this is intended to be a maximum number then it is too low for applications, imposes an unnecessary restriction on the market and also is lower than regulations adopted in the rest of the world. Please consider removing this "Not to exceed 25dBm (0.3W)" and "Maximum mean e.i.r.p density is limited to -2 dBm/MHz" from the table because it is potentially confusing and unnecessary.

Question 7: IDA invites views and comments on whether there should be a limit cap on the RF output power for high radiated power Fixed Services and whether there are potential health concerns for high radiation equipment.

No Comments.

Question 8: IDA invites views and comments on IDA's proposal to exempt low-radiated power devices (≤ 40 dBm EIRP) from licensing.

Commenter agrees with IDA's proposal to exempt low-radiated power devices from licensing. As IDA has pointed out, other geographies have followed this approach. We believe this approach will lead to the best and most efficient usage of this spectrum.

Question 9: IDA invites views and comments on IDA's preference for a full licensing approach for high radiation equipment (> 40 dBm EIRP) operating in this band.

No comment.



Question 10: IDA invites views and comments on the safety aspects of operation of 60 GHz wireless systems and what guidelines must be established to protect individual users.

Commenter respectfully agrees with IDA's assessment of safety concerns and with the references IDA has supplied in support of such statements. This information supports the conclusion that no guidelines need to be established to protect individuals.

Again, thank you for leadership and please let us know if you have questions about our comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Arnold Brown".

Arnold Brown, President, WirelessHD, LLC.

cc: Lianne Caetano, Executive Director, WirelessHD, LLC